

CLAIMS

What is claimed is:

1. A mobile satellite telecommunications system, comprising:

at least one user terminal;

at least one satellite in earth orbit; and

at least one gateway bidirectionally coupled to a data communications network;

said at least one satellite comprising a Domain Name Service (DNS) server for responding to a DNS query that is received from said at least one user terminal.

2. A mobile satellite telecommunications system as in claim 1, wherein said DNS server is comprised of a DNS database that receives Internet Protocol address information from said gateway.

3. A mobile satellite telecommunications system as in claim 1, wherein said DNS server is comprised of a DNS database that receives Internet Protocol address information through said gateway.

4. A mobile satellite telecommunications system as in claim 1, wherein said at least one satellite is in a non-geosynchronous orbit, and further comprising at least one satellite in a higher orbit, wherein DNS server is comprised of a DNS database that receives Internet Protocol address information from said satellite in a higher orbit.

5. A mobile satellite telecommunications system as in claim 1, wherein said at least one satellite is in a non-geosynchronous orbit, and further comprising at least one satellite in a higher orbit that comprises a second DNS server, wherein

said non-geosynchronous orbit satellite transmits a DNS query received from said user terminal to said satellite in said higher orbit.

6. A mobile satellite telecommunications system, comprising:

at least one user terminal;

at least one first satellite in a non-geosynchronous orbit, said first satellite comprising a first Domain Name Service (DNS) server for responding to a DNS query that is received from said at least one user terminal;

at least one second satellite in a geosynchronous orbit, said second satellite comprising a second Domain Name Service (DNS) server for responding to a DNS query that is received from said at least one first satellite; and

at least one gateway bidirectionally coupled to a data communications network.

7. A mobile satellite telecommunications system as in claim 6, wherein said first DNS server is comprised of a DNS database that receives Internet Protocol address information from said gateway.

8. A mobile satellite telecommunications system as in claim 6, wherein said first DNS server is comprised of a DNS database that receives Internet Protocol address information through said gateway.

9. A mobile satellite telecommunications system as in claim 6, wherein said first DNS server is comprised of a DNS database that receives Internet Protocol address information from said second satellite.

10. A mobile satellite telecommunications system as in claim 6, wherein said non-geosynchronous orbit satellite transmits a DNS query received from said user terminal to said second satellite.

11. A mobile satellite telecommunications system, comprising:

at least one user terminal;

at least one satellite in earth orbit; and

at least one gateway bidirectionally coupled to a data communications network;

said at least one satellite comprising a Domain Name Service (DNS) server and a processor that is responsive to a message that is received from said at least one user terminal, the received message containing a Uniform Resource Locator (URL) to which said processor responds by generating a DNS query to said DNS server to obtain a corresponding Internet Protocol (IP) address.

12. A method of operating a satellite telecommunications system, comprising:

transmitting a Domain Name Service (DNS) query from a user terminal;

receiving the DNS query with at least one satellite in earth orbit; and

applying said DNS query to a DNS server that is on-board said at least one satellite to obtain a corresponding Internet Protocol (IP) address.

13. A method as in claim 12, further comprising, in the event the DNS server is unable to obtain the corresponding IP address, transmitting the DNS query to another satellite.

14. A method as in claim 12, further comprising, in the event the DNS server is unable to obtain the corresponding IP address, transmitting the DNS query to a second satellite in a higher orbit, the second satellite also comprising a DNS server.

15. A method as in claim 12, further comprising, in the event the DNS server is unable to obtain the corresponding IP address, transmitting the DNS query to a gateway that also comprises a DNS server.

16. A method as in claim 12, further comprising, in the event the DNS server is unable to obtain the corresponding IP address, transmitting the DNS query to a gateway that is coupled to at least one further DNS server.

17. A method as in claim 12, further comprising updating a DNS server database with information received from a terrestrial DNS server.

18. A method as in claim 12, further comprising updating a DNS server database with information received from a space-based DNS server.

19. A method of operating satellite telecommunications system, comprising:

transmitting a message containing a Uniform Resource Locator (URL) from a user terminal;

receiving the URL with at least one satellite in earth orbit; and

generating, in response to said URL, a DNS query to a DNS server that is on-board said at least one satellite to obtain a corresponding Internet Protocol (IP) address.

20. A method as in claim 19, further comprising, in the event the DNS server is unable to obtain the corresponding IP address, transmitting the DNS query to another DNS server located on-board another satellite.

21. A method as in claim 19, further comprising, in the event the DNS server is unable to obtain the corresponding IP address, transmitting the DNS query to a terrestrially-located DNS server.

22. A method as in claim 19, further comprising, in the event the IP address is obtained, forwarding the message to an Internet destination server having an address that corresponds to the IP address.